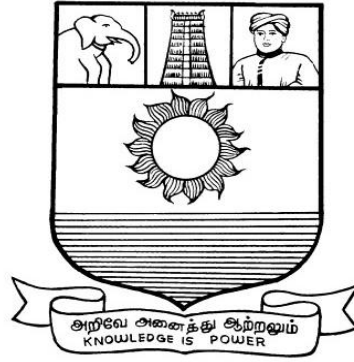


மனோன்மணியம் சுந்தரனார் பல்கலைக்கழகம்  
திருநெல்வேலி – 627 012

**Manonmaniam Sundaranar University  
Thirunelveli – 627 012.**



கல்விசார் நிலைக்குழுக் கூட்டம்

**MEETING OF THE STANDING COMMITTEE ON  
ACADEMIC AFFAIRS HELD ON 09.02.2017**

**Syllabus for Diploma in Food Processing Course offered  
through Directorate of Vocational Education  
(Community Colleges and Extension Learning Programme)  
from 2017 - 2018**

**DIPLOMA IN FOOD PROCESSING**  
**SCHEME OF EXAMINATION**

Subject code	Title of the Paper	Credit	Hours	Passing Minimum
<b>Semester I</b>				
C17FG11/E17FG01	Fundamentals of Food Science	6	90	40/100
C17FG12/E17FG02	Food Processing and Preservation in general	6	90	40/100
C17FG13/E17FG03	Fundamentals of Food Nutrition	6	90	40/100
C17CE10/E17CE10	Communicative English	6	90	40/100
C17FGP1/E17FGP1	Practical I Covering first 3 papers	6	90	40/100
<b>Semester II</b>				
C17FG21/E17FG04	Meat & Fishery Products Processing	6	90	40/100
C17FG22/E17FG05	Dairy & Agro Products Processing Management	6	90	40/100
C17LS23/E17LS05	Life skill	6	90	40/100
C17FG24/E17FG07	Food Quality Control and Waste Management	6	90	40/100
C17FGP2/C17FGP2	Practical II Covering first 3 papers	6	90	40/100

**Eligibility for admission:** Pass in 12<sup>th</sup> std examination conducted by the Govt. of Tamil Nadu Board of Secondary Education, Government of Tamil Nadu or any other equivalent examination.

**Examination:** Passing Minimum for each paper is 40%. Classification will be done on the basis of percentage marks of the total marks obtained in all the papers and as given below:

- 40 % but less than 50 % - Third class
- 50 % but less than 60 % - Second class
- 60 % and above - First class

## Syllabus

**First Semester:-**

- Paper I - Fundamentals of Food Science
- Paper II - Food Processing and Preservation in general
- Paper III - Fundamentals of Food Nutrition
- Paper IV - Communicative English
- Paper V - Practical 1-Covering first 3 Papers

**Second Semester:-**

- Paper VI - Meat & Fishery Products Processing
- Paper VII - Dairy & Agro Products Processing Management
- Paper VIII - Life Skill
- Paper IX - Food Quality Control and Waste Management
- Paper X - Practical II- Covering first 3 papers

**\*(Semester Pattern for Community College Only)**

## **Semester I**

### **(C17FG11/E17FG01)Fundamentals of Food Science**

**Unit 1:** what is Food science , Concept & Objectives of Food & Food science, Classification of Food, Function of Food.

**Unit 2:** Fundamentals of Foods, Food additives, Introduction to Food Preservation & Packaging.

**Unit 3:** Food selection & Sensory evaluation, sensory evaluation exercise, Food preparation basis, Water in Food & Food preparation.

**Unit 4:** Food & Diet, Menu planning, Beverages, Organic foods, genetically modified foods.

**Unit 5:** Food regulatory agencies & Food labelling, Food poisoning & Food content, Food purchasing & Food supply.

#### **References:**

1. Brown Ancy. Understanding Food principles & Preservation. Wordsworth Thomson Learning; 4<sup>th</sup>Edn 2011.
2. Nutritive value of Indian foods, Gopalan C Ramasastri, S.C. Balasubramainian, National Institutes of Nutrition, 1993.
3. Essential of Food & Nutrition Vol. 1, Dr.Swaminathan, 2<sup>nd</sup>Edu, BAPPCO. 1985.

## **(C17FG12/E17FG02)Food processing & Preservation in General**

**Unit 1:** Introduction to Food Preservation- Concepts, Importance & Principles of Food preservation.

**Unit 2:** Concept & History of preservation techniques by Drying – Types of Drying & Dryers – Processing prior to drying.

**Unit 3:** Concept & Importance of Preservation by using high temperature; Methods used – Pasteurization, Boiling & Canning;Effect of high temperature on food.

**Unit 4:** Low temperature preservation – Concept & History; Types of preservation methods by low temperature – Equipments used; Treatment before freezing the food.

**Unit 5:** Classification of Fruits & Vegetables, Meat & Fishery product, Dairy products.

### **References Books:**

1. Food processing and preservation, B. Sivasankar, 2002, Prentice Hall Pvt. Ltd pub.
2. Hand book of Food Processing: Food Preservation, T. Varzakas and C.Tzia, 2015, CRC Press pub.
3. Food Processing, J.S. Carl, 2008, E. Book ( ISBN: 978-87-7681-780-0)
4. Food Processing and Preservation, 2006, G. Subalakshmi and U.A.Shobha, New Age International Pub.

## **(C17FG13/E17FG03)Fundamentals of Food nutrition**

**Unit I:** Introduction to study of Nutrition – Foods, Nutrition & Health – Digestion, Absorption & Utilization nutrients – Recommended levels of nutrients.

**Unit II:** Function of nutrients – Carbohydrates, Fats & Oils, Proteins & Amino acids, Vitamins and Minerals & Water.

**Unit III:** Food planning & Management – Guidelines for adequate food planning & various age groups, Family – Indian meal planning – Vegetarian & Non vegetarian.

**Unit IV:** Food selection & Food preservation – Selection, purchase & Storage of food. Food Preparation & Preservation – their methods.

**Unit V:** Food safety & supply v Food sanitation & Hygiene, Food borne disease, Food standards & Laws.

### **References:**

1. Fundamentals of Foods & Nutrition by Sumati R.M. & M.V. RajaGopal, New Age International (P) Ltd, Publishers, New Delhi.
2. Fundamentals of Human nutrition.
3. Applied nutrition, R. Rajaleshmi, Oxford & IBH Publi.Co.Pvt. Ltd, 3<sup>rd</sup> Edn. 1981.

## **(C17CE10/E17CE10)Communicative English**

### **Unit I: Learning context**

Concept of learning – Learning style –Grammatical framework – sentence framing – paragraph and texts

### **Unit II: Reading**

Basic concept – Purposes of reading-Decoding-Reading materials – Barriers of reading

### **Unit III: Writing**

Basic concept-Writing style-Terminology-stages-English spelling and punctuation – Written texts

### **Unit IV: Speaking**

Language functions-Conversation- Features of spoken English – Types of English course: functional English, English literature, advance English – Phonetic

### **Unit V: Developing Communication Skills**

Meaning –Classroom presence- Features of developing learning process- Practical skills and Listening- uses of communicative English

### **Reference Books:**

1. Raman,m.&S.Sharma (2011) communication skills,OUP,New Delhi: India
2. Lata,P.&S.Kumar(2011) communication skills,OUP,New Delhi: India,
- 3.Leech,G&J.Svartvik(2002) A communicative grammar of English,Pearson,India,
4. Sethi,J. and P.V. Dharmija (2007) A course in Phonetics and spoken English.Second edition, Prentice hall: New Delhi

**(C17FGP1/E17FGP1) Practical- I (Covering first three papers)**

1. Measurement of Weight of Raw & Cooked foods
2. Preparation of Products from Fruits & Vegetables
3. Preparation of Products from Meat & Fish
4. Preparation of Products from Milk
5. Preparation of Products from Tubers
6. Demonstration of Drying equipments
7. Preparation of Food products by drying
8. Blanching of Vegetables, Fish & Meat
9. Demonstration of Freezing equipments

## **Semester II**

### **(C17FG21/E17FG04) Meat and Fishery Products Processing**

**Unit I:** Importance of Meat & Sea food processing for entrepreneurship, Scope of Meat & Sea food processing industries.

**Unit II:** Nutritious value of meat, Pre slaughter, Slaughter & post slaughter charges, meat cuts & Deboning Preservation & Self life study of Meat products.

**Unit III:** Meat processing & its methods, Post Mortem charges during meat processing, Quality of Meat & its measurements.

**Unit IV:** Nutritive value of Fish, Post Mortem charges & processing of Fish, Self life study of Fish products.

**Unit V:** Principles & Methods of Fish processing, Quality of Fish suitable for Fish processing, Dehydration, Canning, Pickling of Fish, Fish meal protein, Fish meal powder.

#### **Reference Books:**

1. P.K. Mandal & A.K. Biswas, Animal Product Technology – Studium Press Pvt Ltd, 2014.
2. Enda J. Cummins, James G. Lyng, 2016, Emerging Technologies in Meat Processing: production, Processing & Technology, Wiley-Blackwell publishers.
3. Meat processing Technology- FAO Health Series No: 59.
4. Processing of Fish & Fish products- FAO. 2011.
5. Fish processing technology, George M. Hall, Springer, 1992.



## **(C17FG22/E17FG05)Diary and Agro Products Processing**

**Unit I:** Collection & Transportation of Milk, Practice for Collection of milk, Reception & preliminary testing of milk at plant.

**Unit II:** Processing of Market milk: Chilling, Clarification, storage of Raw milk, Physicochemical property of milk, Thermal Processing of milk- Pasteurization & its methods, Nutritive value of Heat processed milk.

**Unit III:** Different machines used in Agro processing industry & their working principles- Need & Importance of Storage & Packaging of Agro products.

**Unit IV:** Primary & Secondary processing of Rice, Wheat & Corn, Methods of Cleaning, Grading, Milling, Standards for the Rice & Wheat flour, Adulteration in flour.

**Unit V:** Classification of Pulses & Cereals, Cereals & Pulse milling methods, Recovery & Utilization of by products from cereals-Spices & Condiments their types, Production & Processing.

### **Reference Books:**

1. Modern Technology of Milk processing & Dairy products- 4<sup>th</sup>Edn-NIIR board- NIIR Project Consultancy Service, Publi-2013.
2. Dairy production & products- FAO Publication.
3. Milk & Dairy products- FAO Publication.
4. Modern Technology of Food processing & agro based industries- 2<sup>nd</sup>Edn- NIIR Board- 2003. NIIR board Publication.
5. Cereal Food Technology- P.K. Chattopadhyay - 2<sup>nd</sup>Edn- NIIR Board Publications, 2006.

**(C17LS23/E17LS05)LIFE SKILL**

**(Common to All Courses)**

**UNIT- I ATTITUDE :** Positive thinking – Goal setting – Problem Solving and Decision making – Leadership and Team Work.

**UNIT- II COMMUNICATION SKILLS:** Oral communication: Concept of English language – Fluency – Verbal communication in official and public situations.

**UNIT-III COMMUNICATION SKILLS:** Written Communication: Comprehension – Writing a formal letter like application for Job, enquiry, reply, complaint and such others – preparation of Resume, Curriculum Vitae.

**UNIT- IV COMPUTING SKILLS – 1:** Introduction to Computers, its various components and their respective functions – Memory storage devices – Microsoft (MS) Office – MS Word.

**UNIT - V COMPUTING SKILLS – 2** Internet Basics – Origin of Internet – MODEM – ISP – Upload – Download – e-mail – Origin of worldwide web (www) Browsers – Search engines.

**Reference books:**

Life skill, Manonmaniam Sundaranar University Publications Division (2011)

**(C17FG24/E17FG07)Food Quality Control & Waste Management**

**Unit I:** Definition & Importance of quality control- Nutritional quality, Microbial quality & Sensory quality of food. Effect of Processing &Storage on Quality of food.

**Unit II:** Food standard Agencies- ISI, AGMARK- Bacteriological standards for foods (Fruits, Vegetables, Cereals, Milk & its Products, Meat & Fish and their Products). ISO Certification their Regulations.

**Unit III:** Introduction of food waste materials, waste utilization available in food Industries- Different food wastes from Fruits, Vegetables, Meat, and Dairy & Fish based industries & their possible utilization.

**Unit IV:** Treatment & Disposal of Effluents from Industries & their Types-Trickling filters, Biological aerated Filters, Activated Sludge.

**Unit V:** DO concentration as AN INDICATOR OF Water quality Measurements of BOD & COD

**Reference:**

1. Nutritional & Safety aspects of Food Processing- Tannenbaum S.R, 1979. Marcel Decker Publication, Newyork.
2. Waste Management for Food Industries by IoannissArvanitayannis.
3. Utilization of By products & Treatment of waste in the Food Industries by V. Oreopoloa

**(C17FGP2/C17FGP2) Practical II (Covering first three papers)**

1. Industrial visit to Meat & Fish product industries.
2. Slaughtering of Goat, Sheep, Chicken by different methods- Demo.
3. Meat Processing: Cutting, Cleaning, Storage, Sanitation.
4. Curing & Canning of Meat & Fish product.
5. Preparation of FPC & Fish meal powder.
6. Fish quality checking.
7. Reception of Milk at the plant.
8. Pre treatment of raw milk, Chilling, Clarification, Filtration.
9. Cream preparation & Standardisation of Milk.

10. Preparation of special Milk (Flavoured milk, Toned milk, Vitaminized milk etc).
11. Demonstration & Package & Labelling of Agro products.
12. Determination of Moisture content in Flour using Hot air oven.

-----